



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,394	05/05/2004	Albin Peter Berzinis	133996-2	7561

7590 01/05/2005

Henry H. Gibson
General Electric Company
One Plastics Avenue
Pittsfield, MA 01201

EXAMINER

ASINOVSKY, OLGA

ART UNIT	PAPER NUMBER
----------	--------------

1711

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,394	BERZINIS ET AL.	
	Examiner	Art Unit	
	Olga Asinovsky	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) two pages
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 05/05/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barghoorn et al U.S. Patent 6,566,457.

Barghoorn discloses an impact modifier composition and a process for preparing impact modifier comprising a graft rubber and at least one graft shell. A graft rubber is a graft core comprising an aqueous dispersion of elastomeric polymer comprising at least one conjugated diene and at least one copolymerizable monomer with the diene such as n-butyl acrylate, column 2, lines 23-28 and column 3, line 59. A graft shell is prepared from a mixture of a styrene monomer and at least one monoethylenically unsaturated nitrile compound, and said graft shell may include at least one other monomer, column 2, lines 38-53, such as alkyl methacrylate, column 14, lines 20-45. Polymerization process includes a feed process wherein the monomers are added by the progress of polymerization of the monomers previously added to the polymerization vessel, column 6, lines 42-55. Therefore, a continuous polymerization process is readable in applicants' claimed two steps process, column 15, line 33. The thermoplastic polymer can include conventional additives, column 16, lines 54-57, for the present claims 26,

Art Unit: 1711

32, 58 and 64. The graft polymer can have a diameter within the range from 60 to 1500nm, column 16, line 1, for the present claims 8-9 and 40-41. The graft rubber can be used as an impact modifier in thermoplastic blends, column 16, lines 16-49.

The difference between the present claims and Barghoorn is the requirement in the present claims that step (b) is a polymerization of alkyl- or aryl-(meth)acrylate monomer in the presence of the elastomeric phase from (a) step. Reference does not disclose adding polymerizable alkyl methacrylate monomer for making outer shell polymer.

It would have been obvious to one of ordinary skill in the art to modify a process for producing graft rubber in Barghoorn's invention wherein a graft shell is prepared in two steps, such that first step includes polymerization of a mixture of styrene monomer and an acrylonitrile monomer in the presence of a dispersion of elastomeric polymer for producing a first core/shell copolymer, and continuously adding alkyl methacrylate monomer in the polymerization vessel in the presence of previously grafted shell for producing a second grafted shell, because reference discloses two steps in succession for making the graft shell, column 15, lines 31-36, and wherein the order of the particular subsequent alkyl-(meth)acrylate monomer in the last polymerization process is depending on the desired characteristics of the resulting impact modifier, and it involves only routine skill of the worker in the art.

Art Unit: 1711

3. Claims 1-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Molnar U.S. Patent 6,331,580 as taken individually or in view of Gaggari et al U.S. Patent 6,720,386.

Molnar discloses a process for producing a core-shell impact modifier composition dispersed in a matrix polymer such as acrylonitrile-butadiene-styrene or styrene-acrylonitrile copolymers, column 2, lines 61-67. A core-shell impact modifier comprises a rubber core (A), an inner graft shell (B) formed from styrene monomer and/or methyl methacrylate, an intermediate sealer polymer (C) formed from alkyl acrylate monomer, and an outer shell polymer (D) formed from alkyl methacrylate monomer, column 3, lines 14-24. The rubber core (A) is produced from diene monomer, column 5, lines 36 and 39. Particle sizes of the core polymer is within the range of 70 to 110nm, column 7, line 57. An agglomeration agent can be added to control the core particle size, column 10, lines 46-47, for the present claims 8-9 and 40-41. The inner shell polymer (B) can be formed from the mixture of monomers of styrene, alkyl methacrylate and optionally acrylonitrile monomer, column 6, lines 17-36. Reference discloses a continuous polymerization process by continuously feeding the mixture of monomers under controlling polymerization conditions, columns 8-10.

The difference between the present claims and Molnar is the requirement in the present claims that in the step (a) a mixture of monomers of styrene and acrylonitrile is grafted on the core elastomer. Molnar discloses an inner graft shell formed from styrene monomer and/or alkyl methacrylate and optionally of acrylonitrile monomer. It would have been obvious to one of ordinary skill in the art to select the mixture of monomers

such as styrene and acrylonitrile for formulation an inner graft shell polymer in Molnar' s invention because the selection of monomers is depending on the desired characteristics of the resulting impact modifier.

Gaggar discloses a matrix phase with a rubbery graft phase comprising a rubber substrate grafted with styrene and vinyl cyanide superstrate copolymer, column 11, lines 3-8.

It would have been obvious to one of ordinary skill in the art to select the mixture of monomers such as styrene and acrylonitrile for forming an inner graft shell polymer as discloses by Gaggar, because the selection of monomers is depending on the compatibility between the rubber core, an inner shell and outer graft shell as disclosed by Gaggar at column 3, lines 25-27.

Double Patenting

4. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

5. Claims 1-7, 10-25, 27-31, 33-39, 42-45, 47-57, 59-63 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-54 of copending

Art Unit: 1711

Application No. 10/434,914. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Conclusion

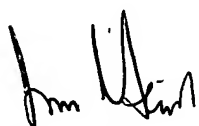
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art is relevant to show the state of the art knowledge.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 571-272-1066. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

O.A.
Dec. 27, 2004


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700

Olga Asinovsky
Examiner
Art Unit 1711